

1. A method of determining a corrected weight of a batching tank, the batching tank adapted to receive one or more materials, each material having a density, the batching tank having a weight, a pressure, and a volume, wherein the batching tank initially comprises a fluid having a density, the method comprising:

measuring one or more first weights of the batching tank, wherein the first weights are determined while the fluid is removed from the batching tank;

measuring one or more first pressures in the batching tank, wherein each first pressure is determined substantially simultaneously with the determination of a first weight;

measuring one or more second weights of the batching tank, wherein each second weight is measured while a material is transferred into the batching tank;

measuring one or more second pressures in the batching tank, wherein each second pressure is measured substantially simultaneously with the measurement of each second weight; and

determining a corrected weight of the batching tank based on one of the second weights, one of the second pressures, one or more first weights, one or more first pressures, the density of the material being transferred to the batching tank, and the density of the fluid.

2. The method according to claim 1 wherein the corrected weight of the batching tank is determined by a method comprising:

determining a volume occupied by the fluid;

determining a volume occupied by the material;

determining a fluid weight by multiplying the volume occupied by the fluid by the density of the fluid;

determining a material weight by multiplying the volume occupied by the material being transferred to the batching tank by the density of the first material; and

determining the corrected weight by adding the material weight and the fluid weight.

3. The method according to claim 1 wherein the density of the fluid is determined by a method comprising:

selecting a first weight, wherein the first weight was measured substantially simultaneously with the closest first pressure, and wherein the closest first pressure is nearest the second pressure; and
calculating the density of the fluid by dividing the selected first weight by the volume of the batching tank.

4. The method according to claim 1 further comprising causing the batching tank to be filled with the material.

5. The method according to claim 4 further comprising halting material from flowing into the batching tank.

6. The method according to claim 5 wherein the material is halted from flowing into the batching tank when the corrected weight is near a target weight.

7. The method according to claim 1 wherein the material transferred into the batching tank is a current material.

8. The method according to claim 1 wherein the material transferred into the batching tank is a next material, and the method further comprises determining a corrected weight of the next material.

9. The method according to claim 1 further comprising:
logging the first weights; and
logging the first pressures.

10. A method of transferring material to a batching tank, the material having a density, the batching tank having a weight, a pressure, and a volume, the batching tank initially comprising a fluid having a density, the method comprising:

removing fluid from the batching tank;

measuring one or more first weights of the batching tank, wherein the first weights are determined while the fluid is removed from the batching tank;

measuring one or more first pressures in the batching tank, wherein each first pressure is measured substantially simultaneously with the measurement of the first weight;

transferring a material to the batching tank;

measuring a second weight of the batching tank, wherein the second weight is measured while the material is being transferred into the batching tank;

measuring a second pressure in the batching tank, wherein the second pressure is measured substantially simultaneously with the measurement of each second weight; and

determining a corrected weight of the batching tank based on the second weight, the second pressure, one or more first weights, one or more first pressures, and one or more material properties.

11. A method according to claim 10 wherein the corrected weight is determined by a method comprising:

determining a volume occupied by the fluid;

determining a volume occupied by the material;

determining a fluid weight by multiplying the volume occupied by the fluid by the density of the fluid;

determining a material weight by multiplying the volume occupied by the material by the density of the material; and

determining the corrected weight by adding the material weight and the fluid weight.

12. The method according to claim 10 wherein the density of the fluid is determined by a method comprising:

selecting a first weight, wherein the first weight was measured substantially simultaneously with the closest first pressure, wherein the closest first pressure is nearest the second pressure; and
calculating the density of the fluid by dividing the selected first weight by the volume of the batching tank.

13. The method according to claim 10 further comprising causing the batching tank to be filled with the material.

14. The method according to claim 13 further comprising halting material from flowing into the batching tank.

15. The method according to claim 14 wherein the material is halted from flowing into the batching tank when the corrected weight is near a target weight.

16. The method according to claim 10 wherein the material transferred into the batching tank is a current material.

17. The method according to claim 10 wherein the material transferred into the batching tank is a next material, and the method further comprises determining a corrected weight of the next material.

18. The method according to claim 10 further comprising:
logging the first weights; and
logging the first pressures.

19. A material transfer system for transferring a material to a batching tank, the batching tank having a weight, a pressure, and a volume, the batching tank initially comprising a fluid, the fluid having a density, the material having a density, the system comprising:

a vacuum pump, the vacuum pump removeably connected to the batching tank and operable to remove fluid from the batching tank;

a weight measurement device operable to measure one or more first weights of the batching tank and a second weight of the batching tank, the weight measurement device having an output;

a pressure measurement device operable to measure one or more first pressures in the batching tank and a second pressure in the batching tank, the pressure measurement device having an output;

one or more valves for allowing the material to enter the batching tank, each valve having a control input; and

a control unit in communication with the output of the weight measurement device and the output of the pressure measurement device, the control unit operable to record one or more first weights measured by the weight measurement device and one or more first pressures measured by the pressure measurement device, and the control unit operable to determine a corrected weight.

20. The material transfer system of claim 19 wherein the control unit is operable to:
receive one or more first weights from the weight measurement device;
receive one or more first pressures from the pressure measurement device;
operating one of the valves, causing material to be transferred to the batching tank;
receive a second weight from the weight measurement device, wherein the second weight
is determined while material is being transferred into the batching tank;
receive a second pressure from the pressure measurement device, wherein the second
pressure is measured substantially simultaneously with measurement of the
second weight; and
determine a corrected weight based on the second weight, the second pressure, one or
more first weights, one or more first pressures, and one or more material
properties.

21. The material transfer system according to claim 20 wherein the control unit is
operable to:
determine a volume occupied by the fluid;
determine a volume occupied by the material;
determine a fluid weight by multiplying the volume occupied by the fluid by the density
of the fluid;
determine a material weight by multiplying the volume occupied by the material by the
density of the material; and
determine the corrected weight by adding the material weight and the fluid weight.

22. The material transfer system according to claim 20 wherein the control unit is
operable to:
select a first weight, wherein the first weight was measured substantially simultaneously
with the closest first pressure, and wherein the closest first pressure is nearest the
second pressure; and
calculate the density of the fluid by dividing the selected first weight by the volume of the
batching tank.

23. The material transfer system according to claim 20 wherein the control unit is operable to close one of the valves to halt material from flowing into the batching tank.

24. The material transfer system according to claim 23 wherein the control unit is operable to close one of the valves to halt the flow of material when the corrected weight is near a target weight.

25. The material transfer system according to claim 20 wherein the control unit is operable to:

log the one or more first weights, wherein each first weights are measured while the fluid is removed from the batching tank; and

log the one or more first pressures, wherein each first pressure is measured substantially simultaneously with the measurement of the first weight.